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THE ELEMENTARY EDUCATION SELECTION RESEARCH PROJECT.

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BALL STATE UNIV., MUNCIE, IND.

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A STUDY OF SELECTION AND RETENTION OF CANDIDATES FOR ELEMENTARY TEACHER EDUCATION PROGRAMS WAS DESIGNED TO TEST AND IMPROVE THE SELECTION OF TEACHER CANDIDATES. THE 8-YEAR, CROSS SECTIONAL, LONGITUDINAL STUDY INVOLVED THREE MATCHED GROUPS (N-802) OF MATRICULATED FRESHMEN ELEMENTARY EDUCATION MAJORS DURING THE 1957-60 PERIOD. SCORES ON 11 STANDARDIZED TESTS WERE DESIGNED TO MEASURE SUCH VARIABLES AS PERSONALITY, MOTIVATION, INTEREST, ATTITUDES, AND SCHOLASTIC APTITUDE. HIGH SCHOOL RECORDS AND COLLEGE GRADES MADE UP THE REMAINDER OF THE OBJECTIVE DATA. SUBJECTIVE DATA CONSISTED OF SEVEN RECORDED PROFESSIONAL JUDGMENTS, FOUR OBTAINED DURING PRESERVICE TRAINING, AND THREE DURING THE SUBJECT'S 1ST INSERVICE YEAR. OF THE OBJECTIVE DATA, ONLY SELECTED SCALES OF THE MINNESOTA MULTIPHASIC PERSONALITY INVENTORY AND THE DYNAMIC FACTOR OPINION SURVEY APPEARED TO BE EFFECTIVE AS SCREENING DEVICES AT THE PRESERVICE LEVEL. INTERVIEWS DURING THE FRESHMEN YEAR INDICATED A SIGNIFICANT RELATIONSHIP BETWEEN EMOTIONAL BALANCE AND MOTIVATION, AND PRESERVICE COMPETENCE. AT THE SOPHOMORE LEVEL, ONLY SOCIAL INTELLIGENCE WAS SIGNIFICANTLY CORRELATED WITH PRESERVICE TEACHING SUCCESS. BASED ON STUDIES USING EITHER PRE- OR IN-SERVICE CRITERIA OF COMPETENCE, A SIGNIFICANT RELATIONSHIP WAS FOUND BETWEEN PRE- AND IN-SERVICE ASSESSMENTS OF COMPETENCE. RECOMMENDATIONS FOR INSTITUTIONAL USE OF THE FINDINGS ARE INCLUDED. (HA)

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The ELEMENTARY EDUCATION SELECTION Research Project

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BALL STATE UNIVERSITY 1966

Preface

THIS BOOK IS ABOUT what is probably the most important aspect of the total educative enterprise. It is not about buildings, finance, or children. It is about teachers. The drama of teaching which inevitably centers around the teacher is not just "sound and fury signifying nothing." All who have been taught know that whenever an authentic teacher is around, something immeasurably wonderful and worthwhile happens. On the other hand, all know the real agony they have gone through in consequence of false teachers who have added to the bitterness of life.

A mechanized world, having harnessed the energies of the sun and the atoms for man's physical convenience, now turns the computer systems to mechanized learning. Only a fool would deny the miracle of it all or fail to recognize the possibility and potential to be found in advanced technology. However, as Loren Eiseley reminds us, man still is the maker of the machines and must judge what to put into them. Mechanized learning in a mechanized, computer-systematized world may have its place, but the teacher still must judge what is to be learned, and his enthusiasm and influence still remain the dimension that "affects eternity."

During most of my twenty years in teacher education I have been persuaded that one of the great imperatives of the profession is the selection of persons who are capable of becoming competent teachers. Although I have recognized the difficulty in devising dependable methods for predicting and selecting, I have felt confident that the difference between the highly competent and the miserably incompetent is readily observable and that these two extremes can be easily detected.

In working with participating students in the laboratory school and with student teachers, I have known the exhilarating feeling of seeing an enthusiastic, sensitive teacher inject his zest and vitality for life into the lives of his students. On the other hand, I have known also the depressed feeling of seeing a lethargic, insensitive teacher transmit his boredom and despair into the lives of his students.

The Elementary Education Selection Research Project was originated with these ideas and experiences uppermost in our minds. The project was intended to test our ideas about prediction and selection. As in any such undertaking, the process was frequently as important as the end product. As a faculty, planning the study, we wrestled with the problems of communication, we strived for commonality in our understanding of competent teaching, and we became sensitive to the personality dimensions that seemed to distinguish the highly competent from the incompetent.

Finally, we were eager to test our assessments of the students as we observed them in their first year of teaching. Observing first-year teachers afforded us the rare luxury of being in many classrooms throughout the country. The experience of talking with principals and teachers and of

observing what is actually happening in public education was refreshing and revitalizing. I am sure my colleagues returned to their college classrooms, as did I, redirected and rededicated.

The material consists of a description of the design, procedures, and results of three dissertations dealing with prediction and selection of teacher candidates. These dissertations were written by Dr. George Grangaard, Dr. Kenneth M. Schultz, and Dr. Albert G. Leep and were directed by Dr. Leslie J. Mauth, Head, Division of Education, Teachers College, and Dr. Helen Sornson, Professor of Education, Ball State University. The three studies, under the title *Mascho Studies*, represent a partial analysis of the data collected. Further analysis is being made, and it is probable that the results of other studies, now in process, will be published at a future time.

Beth Vail Mascho

Acknowledgments

MUCH OF OUR ENJOYMENT in the preparation of the material for this publication came from the conversations with our many friends who kept us constantly alert and who were generous with encouragement and suggestions.

Our special gratitude must go to members of the entire Teachers College faculty who gave so willingly of their time and energy to collect the data. Without their good nature and high professional dedication the innumerable observations of beginning teachers could not have been accomplished. To the faculty we shall be eternally grateful.

The courtesy and graciousness extended us by the beginning teachers and their principals will not soon be forgotten. Their attitude of willingness and enthusiasm to assist in the study lightened our labor.

For structural organization and technical correctness we express our appreciation to Dr. Lucile Clifton of the English Department.

To the secretary, Mrs. Betty Shallcross, who so capably and frequently went beyond the line of usual duty, we are deeply indebted.

We thank the Ball State University Publications Committee for reading our document and approving it for publication.

We are indeed grateful and appreciative of the constant support and sometimes endurance of our spouses, Dr. George Mascho, Mrs. Betty Grangaard, Mrs. Jan Schultz, and Mrs. Peggy Leep.

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Introduction

MUCH HAS BEEN WRITTEN about the subject of teacher candidate selection. Vast amounts of research have been conducted and the results compiled for consideration in an effort to devise valid criteria for the selection of teacher candidates. A bibliography on the topic of teacher selection amounts to an impressive compilation.

Few persons deny the importance and necessity of selecting students who can learn to become highly competent teachers.

> The task of identifying effective teachers (or effective teaching) is crucial to teacher education, selection, and promotion, and—in so far as teaching contributes to the total social welfare—to ultimate survival.[1]

With these words Harold E. Mitzel introduced the section on "Teacher Effectiveness" in the third edition of the *Encyclopedia of Educational Research.* Colleges and universities faced with the formidable task of preparing teachers are compelled to engage continuously in the examination and evaluation of the teacher selection and retention policies which affect the quality of their products and the effectiveness of their programs. Although much agreement is found concerning the importance and necessity of educating competent teachers, the procedure in accomplishing the task has been a perplexing problem.

It was noted in a book edited by Sanford[2] that colleges have shown very little consistency or planning in terms of the criteria used for selection of undergraduate students. Often the formulae are based on pressures from alumni, faculty, parents, and high schools as opposed to being based on quasi-empirical evidence. Furthermore, selection policies often reflect the image of the school as determined by its history, source of support, or concept of public service.

In spite of the vast amounts of research conducted since 1900 concerning selection and retention of undergraduate teacher candidates, there have been few significant results. As recently as 1958 Barr[3] noted that findings of research are generally disappointing in regard to scientific validation of pre-training selection, guidance, and recruitment procedures. He also believed that much more and much better research was needed in this field, particularly in respect to investigations extending over a period of years which test the validity and reliability of proposed criteria under replicated conditions.

Historically, teachers needed to have been graduated only from the levels to which they later returned to teach. Eventually, written examinations

[1] Harold E. Mitzel, "Teacher Effectiveness," *Encyclopedia of Educational Research* (3rd ed.). New York: Macmillan Co., 1960.
[2] Nevitt Sanford (ed.), *The American College, A Psychological and Social Interpretation of the Higher Learning.* New York: John Wiley and Sons, Inc., 1962.
[3] Arvil S. Barr and Robert E. Jones, "Measurement and Prediction of Teacher Efficiency," *Review of Educational Research* 28:256-64, June, 1958.

were required of teachers to insure mastery of content materials. In modern times it is realized that competent teaching is more than having passed through the levels and mastered content materials. How shall teachers be educated to insure competence in this most difficult and delicate enterprise, educating the young human?

Even more perplexing has been the problem of selecting those persons who can profit most from the education offered them and eventually become competent teachers. Elizabeth Peabody, who certainly was concerned with teaching the teacher, did her own selecting by assessing the personalities of young women she happened to meet and then encouraging those she felt best qualified to pursue early childhood education. The educational business in America has become so massive and the demands for teachers so great that we can no longer rely solely on those already in the profession luring the young to join them. Since we know that many people who want to become teachers have had *a* teacher while those who do *not* want to teach have had *a* teacher, it is not wise to minimize the influence of teachers in recruiting. On the other hand, since we also know that not everyone can teach, even if properly inspired, the need for teacher selection exists.

Implicit in the selection of teacher candidates is the problem of predicting who will and who will not be competent as a teacher. The colleges educating and preparing teachers are required in most instances to place a stamp of approval on the teachers by recommending them upon graduation to the state for certification. Three problems are inherent in this final stage of the pre-service program. First, occasionally a student reaches the point of graduation but has demonstrated by his performance or some personal characteristic that he should not be certified to teach. The certifying agent or agents of the faculty are faced with the dilemma of denying a student the professional life for which he has spent four years in preparation or of loosing an incompetent teacher on children. Second, and equally unjustifiable, is the necessity often of placing the making of this decision on one person. Because he has no way of providing another future for the student, he often certifies an obviously incompetent teacher and the entire faculty looks on in helpless amazement. Third, the high cost of attempting to prepare misfits, transients, and those who look upon teacher training only as insurance, a stepping stone, or a secondary occupation necessitates professional responsibility for selection. All of these problems could be obviated if selection took place earlier in the pre-service program.

The National Commission on Teacher Education in its *New Horizons for the Teaching Profession* stated that higher certification standards and definitive operating programs for selective admission and retention in teacher education increase rather than decrease the supply of teachers.[4] The commission further stated that it has statistically significant evidence that institutions having definitive selection programs for teacher education are distinctly better producers than institutions with less selective programs.

[4] Margaret Lindsey (ed.), *New Horizons for the Teaching Profession*, National Commission on Teacher Education and Professional Standards. Washington, D.C.: National Education Association, 1961. 243 pages.

Those who withdraw from prediction and selection on the grounds that there is a shortage of teachers make, in one instance at least, an erroneous assumption. It simply cannot be substantiated that selection will cut down on the number of persons entering the profession. Berghoefer and Cooke[5] noted at Chicago Teachers College that their experiences over the last several years have shown that raising admission standards is a better means of attracting large numbers of good teaching prospects than lowering them.

As enrollments increase, colleges and universities will be able to be more selective in their policies and practices controlling admission to professional programs. The result will tend to reduce the range of ability or talent among those qualifying for entrance. Therefore, tests currently in use will become less effective for distinguishing between students who are likely or unlikely to succeed. This condition will probably require development and utilization of new tests to measure factors other than scholastic ability and academic preparation. For example, better instruments to assess personality and motivation may be needed. As an illustration, in a study conducted at Sarah Lawrence College it was found that in selecting a student body to function in a free community, it was almost as essential to consider the personal attributes of applicants as to assess their academic qualifications.

Booker supported the above idea in an article dealing with the selective admission of elementary education majors when he stated:

> College teachers and administrators must now undertake the urgent task of devising instruments of measurement and selection procedures which will be effective in implementing such a comprehensive guidance program in teacher education. The present generally accepted admission criteria of 'satisfactory college grades' and an expressed 'desire to teach' must be supplemented by other qualitative and discriminating requisites more in keeping with the actual requirements for successful teaching.[6]

Despite decades of research on the problem, educators must face the fact that there is no common agreement on the criteria for describing or evaluating teacher competence. Further, it is one thing to assert that a teacher should possess cheerful, friendly, and sympathetic characteristics rather than their opposites, but it is quite another to identify in objective terms the specific and distinctive qualities of an effective teacher. In over six years of intensive study, Ryans directed one of the most comprehensive attempts to date to study conditions and qualities related to teaching success. The main purposes of his *Teacher Characteristics* are stated in the following paragraph.

> The Teacher Characteristics Study was conducted with two possible uses of the results in mind: first, by school systems as an aid in identifying teachers who, at the time of selection for employment or perhaps in connection with promotion, have characteristics similar to those deemed important and desirable by the particular school system

[5] C. M. Berghoefer and L. D. Cooke, "Tightened Admission Policy Produces More and Better Teachers: CTC Admission Standards Rise during Five-Year Period," *Chicago Schools Journal* 43:311-14, April, 1962.

[6] T. E. Booker, "Selective Admission to Elementary Education," *Peabody Journal of Education* 32:93-98, September, 1954.

> and the culture it represents; and, second, by teacher education institutions as an aid to a better understanding of teacher characteristics and associated conditions, which would contribute to improved procedures for selecting teacher candidates and to the improvement of professional courses and curricula.[7]

It has been asserted, even by some members of the profession, that teachers and teacher educators cannot distinguish, with any consistency, the good teachers from those less competent. Despite the seeming lack of agreement on appropriate criteria to apply, the fact remains that teachers are continuously being judged. Good teaching does seem distinguishable on the basis of individual, if not collective, evaluation. Teachers do gain reputations for teaching competence or its lack, both within and without the profession. Declaring that the profession cannot judge the performance of its own members serves only to disillusion the public. As Arthur Combs stated, "Who wants to send his child to school where the teachers don't know what good teaching is?"[8] There appears to be no alternative. Judgment will be made by others if teachers refuse to accept responsibility for defining professional competence. Collective professional judgment must be applied to the situation until other criteria become available through research. Errors will occur, of course, since professional judgment is not infallible. The factor of human error cannot be denied. However, to reject the best criteria available at this time, simply because professional judgment is not perfect, is to neglect a responsibility which is undeniably part of being professional. An extension of this position applies to teacher educators who must, of necessity, evaluate progress of candidates on programs leading toward certification. The successful student is one who performs, or seems to have potentialities, in ways comparable to the intentions or standards of those who are educating him to become a teacher.

New techniques need to be devised to assure a greater degree of certainty of potential for the development of competent performance in teacher selection. Longitudinal studies probably offer the most promise in seeking ground on which selection may be based. The consistency of teacher performance with the curricular design as a criterion for competence provides a unique approach to teacher selection.

[7] D. G. Ryans, *Characteristics of Teachers.* Washington, D.C.: American Council on Education, 1960.

[8] Arthur W. Combs, "Can We Measure Good Teachers Objectively?" *NEA Journal* 53:34-36f., January, 1964.

Chapter I

The Elementary Education Selection Research Project

PROVIDING SCHOOLS WITH GOOD TEACHERS is one of the most crucial tasks confronting education departments of colleges and universities. The profession can no longer evade the issues of teacher selection and evaluation of teaching performance, particularly in view of its dependence upon public funds and the seriousness of its responsibility for directing and guiding the young citizen. With an awareness of the contributions and limitations of past studies concerning teacher selection and retention, Ball State University attempted to face the situation constructively. The following study on selection and retention of candidates for elementary teacher education was designed to test and improve the selection of teacher candidates on the existing curriculum.

Beginning in the autumn of 1953 and continuing throughout the following year, the elementary education staff began to hold meetings in which consideration was given to selection and admission problems. The group consisted of about fifteen persons who were involved in elementary education at Ball State University. After many meetings of both the larger group and a number of smaller groups in which the dimensions of the problem were thoroughly explored, a definitive research study began to take shape. The result was a research design that combined cross-sectional and longitudinal approaches in an investigation extending over an eight-year period.

The following questions may be of interest as they represent some of those asked by the original group in its efforts to develop various aspects of the research project:

1. Is it possible to predict the extremes of the highly competent and the incompetent in groups of candidates in elementary teacher education?
2. If so, at what stage in the education program can these extremes be predicted?
3. Is there a constellation of behavioral patterns that indicates the extremes of competence and incompetence?
4. Does objective data in combination with that of a subjective nature render a greater certainty of prediction than either the objective or subjective data alone?
5. Can some professional teacher educators predict success in potential teachers with more accuracy than others?
6. At what level of reliability can candidate success be predicted, if at all?

7. What factors are the best predictors of candidate success and what should be the nature of a selection program that supplements the usual criteria of academic success?

The assumptions that were accepted as basic to a selection program were:

1. Not everyone nor just anyone can become a teacher.
2. Academic grades cannot be used alone as a predictor of competence on programs in teacher education.
3. Teaching ability is predictable.
4. Professional teacher educators are able to recognize good teaching when they observe it.
5. Teacher selection does not need to incorporate responsibilities for salvage or remediation.
6. Collective judgment is more reliable than individual judgment.
7. Selection will improve the quality of graduates on teacher education curricula.
8. There are qualities of good teaching that transcend the variations in teaching situations.

After much deliberation and planning, the Elementary Education Selection Research Project was developed to test the following major hypothesis:

> Selected objective and subjective variables are significantly related to competent and less competent pre-service and in-service performance of teachers who have been on the elementary education curriculum at Ball State University.

Chapter II

Criteria and Procedures Used in Selecting the Study's Samples

HAVING ACKNOWLEDGED A NEED to study Ball State University's selection, admission, and retention program, the elementary education faculty, after three years of planning, proposed, initiated, and followed through with an eight-year longitudinal and cross-sectional study of selected students who enrolled in the Elementary Teacher Education curriculum during the years of 1957, 1958, 1959, and 1960. The subjects were comprehensively studied as they progressed through the four years of college attendance and their first year of teaching. Series of objective tests, interviews, subjective evaluations of laboratory experiences, and observations of first-year teaching were processed for selected students of the project. The nature of the data collected was related to the two major purposes of the project, viz., (1) to design a study whereby the elementary education faculty might identify criteria which could be used in a program of selection and retention of elementary education candidates and (2) to gain evidence which may support future curricular revisions and directions.

Criteria Used in Selecting the Samples

Three matched groups of students of the total matriculating elementary education majors at Ball State University were selected in the fall of 1957, 1958, 1959, and 1960. The groups were identified as "A," "B," and "C." The standardized test criteria used for matching and selecting subjects for the project consisted of the following variables.

1. *Cooperative School and College Ability Test (SCAT).*

The students were selected on the basis of total score obtained on the above test. The mean score on groups "A," "B," and "C" for each consecutive year and on each group varied less than .01 of the *SCAT* mean except for the year 1957 which varied less than .015. This procedure provided a random selection of students divided into equated groups.

2. *New Purdue Placement Test in English (Purdue).*

The students were further matched with less than a variance of .01 of the grand total mean for the total score on the *Purdue* test, thus providing the basis for equating the groups on a second criteria.

The means and grand means for each test by sample for the years 1957, 1958, 1959, and 1960 are shown in Table 1.

Further criteria used by the Elementary Education Selection Research Project to match samples "A," "B," and "C" for each year were:

3. Sex—the number of males and females was proportionately the same as in the total population of elementary education majors.

TABLE 1

The Percentile Means and Grand Means for the *SCAT* and *PURDUE* Tests

YEAR	MEANS						GRAND MEANS					
	SCAT			PURDUE			SCAT			PURDUE		
	"A"	"B"	"C"	"A"	"B"	"C"	"A"	"B"	"C"	"A"	"B"	"C"
1957	44.437	43.145	44.520	56.041	56.125	56.187	44.034			56.118		
1958	48.52	48.68	48.60	54.186	54.293	54.120	48.60			54.200		
1959	56.41	56.41	56.06	61.30	61.60	61.45	56.29			61.45		
1960	51.066	51.106	51.213	59.12	59.05	59.21	51.128			59.12		

4. Age—all matriculating elementary teacher education students in samples "A," "B," and "C" were twenty-five years of age or under.
5. Marital status—all students in samples "A," "B," and "C" were single at matriculation.
6. Matriculation—all students in samples "A," "B," and "C" were original matriculates of Ball State University.

Procedures Used in Matching the Samples

The Elementary Education Selection Research Project used for each of the four years (1957, 1958, 1959, and 1960) the following procedures to identify the three matched samples.

1. Matriculating freshman elementary education majors were identified.

2. In order to assist with the identification of the subjects for Groups "A," "B," and "C," two tests, the *Cooperative School and College Ability Test (SCAT)* and the *New Purdue Placement Test in English (Purdue)* were administered to the matriculating freshmen. Students' scores on the tests were punched onto IBM cards.

3. The IBM-punched cards were sorted into piles with almost equal or similar *SCAT* total and *Purdue* total scores. The cards were listed according to *SCAT* percentiles (10's, 20's, 30's, etc.) in groups of three. The cards of the boys were separated from the cards of the girls. If boys' cards were used, it was made certain that there were at least three with similar scores. Care was given to be able to match three boys on each of the six criteria since fewer boys committed themselves to the elementary teacher education curriculum at time of matriculation and a representative sample of elementary education majors was desired for each of the groups. Also, those persons who were older than normal college age (twenty-five years) were discarded. Students who were not married at time of matriculation were considered as representative of elementary education majors.

4. The IBM cards were separated into three groups, always keeping the *SCAT* total scores and *Purdue* total scores as nearly equal as possible. Total scores in each percentile range were checked to make sure that they were nearly equal.

5. There were as many Elementary Education Selection Research Project subjects in each group in the upper five deciles (50-90) as there were in the lower five deciles (00-40).

6. By dividing the total *SCAT* scores and the total *Purdue* scores in each group by the number of cards used, it was possible to determine the *SCAT* and *Purdue* means for each group.

7. Table 1 notes that the means of each group, samples "A," "B," and "C" on the *SCAT* and *Purdue*, did not vary more than .01 from the grand mean for each test for any one year except for the year 1957 which varied less than .015.

Table 2 notes the total number of students in samples "A," "B," and "C" throughout the four-year period of sampling. It may seem the 1957 sampling was smaller than the following samples, but since the group size was consistent for all three groups it did not affect the study statistically.

TABLE 2

The Number of Students in Samples "A," "B," and "C" at the Time of Matriculation

Year of Matriculation	Number in Sample "A"	Number in Sample "B"	Number in Sample "C"	Total in "A," "B," and "C"
1957	42	44	41	127
1958	75	75	75	225
1959	75	75	75	225
1960	75	75	75	225
Totals	267	269	266	802

In summary, the three groups, samples "A," "B," and "C" identified by the Elementary Education Selection Research Project, were shown, at the time of matriculation, to be statistically similar and representative of the total student body enrolled in elementary teacher education at Ball State University for each of the four years.

Chapter III

Data Collected by Selection Project

THE ELEMENTARY EDUCATION FACULTY at Ball State University identified the data they preferred to have collected within the design of the Elementary Education Selection Research Project. The decision of what data to select was related to the two major purposes of the Selection Project: (1) to identify and objectify criteria which could be utilized by the elementary education faculty in a program of selection, admission, retention, and guidance of teacher candidates and (2) to provide evidence to support future necessary curricular revisions.

Innumerable explorations of teacher competence have been conducted on the basis of a vast collection of objective data. With the advent of the development of a wide spectrum of characteristics much effort has been expended to determine the characteristics correlating with teacher competence. Probably because of the nature of the teaching act, these characteristic studies have not been sufficiently inclusive so that early prediction of teacher competence can be made with greater certainty.

The Elementary Education Selection Research Project has two distinct sections in its design. One section deals with the characteristics measured by already existing and validated objective tests. The data secured from these tests were recognized as objective data. The other section of the study consisted of subjective data.

Description of Objective Data

Standardized Tests A battery of standardized tests was given to all students of the Elementary Education Selection Research Project during their freshman year. As noted in Chapter II, the three samples, Groups "A," "B," and "C," in each of the four years were matched on the *Cooperative School and College Ability Test (SCAT)* and the *New Purdue Placement Test in English (Purdue)*. The 1955 Examiner's Manual[9] for *SCAT* noted that the tests were measures of developed ability indicative of the relative academic success the student is likely to achieve in his next level of schooling. The *New Purdue Placement Test in English* was designed to sample the knowledge a student possesses of what is considered "good English."[10] Subtest number one of the *Purdue* test provided an estimate of his knowledge of language usage and spelling, knowledge of grammar, punctuation, and effectiveness and clearness in writing. Subtest number two of the *Purdue* test

[9] *Cooperative School and College Ability Tests: Manual for Interpreting Scores.* Princeton, New Jersey: Educational Testing Service, 1955-57.

[10] G. S. Wykoff *et al., Examiner's Manual for Interpreting the New Purdue Placement Test in English.* Boston: Houghton Mifflin Company, 1955.

provided an estimate of his reading comprehension or understanding and of the level of his vocabulary. The total score for the *Purdue* test was a composite score of the total test.

At the time of matriculation, all subjects of the Elementary Education Selection Research Project were required to take five additional tests: *Minnesota Multiphasic Personality Inventory (MMPI), Minnesota Teacher Attitude Inventory (MTAI), Dynamic Factor Opinion Survey (D F Opinion), Sequential Tests of Educational Progress (STEP),* and the *Strong Vocational Interest Blanks (SVII).* The *Minnesota Multiphasic Personality Inventory* is ". . . a psychometric instrument designed ultimately to provide, in a single test, scores on all the more important phases of personality."[11] The *MMPI* should provide objective information on the common personality characteristics. The stated purpose of the *Minnesota Teacher Attitude Inventory* is ". . . to measure those attitudes of a teacher which predict how well he will get along with pupils in interpersonal relationships and indirectly how well satisfied he will be with teaching as a vocation."[12] It was noted in the *MTAI* manual that one of the most direct uses of the test is in the selection of students for teacher preparation. The *Dynamic Factors Opinion Survey* is a comprehensive factor-analytic investigation of interests.[13] For the *D F Opinion,* interests were defined basically as dimensions of motivation. The *Strong Vocational Interest Blanks* have shown that men and women engaged in particular occupations possess a characteristic set of likes and dislikes which differentiate them from persons following other professions.

The manual for the *Sequential Tests of Educational Progress* noted an ". . . attempt to measure outcomes of formal and informal instruction which might have been acquired from a number of school courses and other educational experiences."[14] The authors of *STEP* pointed out that the tests were planned with emphases on broad understandings and abilities to utilize learned skills in solving new problems rather than abilities to handle only the facts of a lesson.

The standardized tests selected by the elementary education faculty at Ball State University for administering to the subjects of the project incorporated objective measurements of personality, motivation, interests, attitudes, and scholastic aptitude.

Measures of Academic Achievement The grade in each course taken by the subjects of the Elementary Education Selection Research Project while they were undergraduate students at Ball State University was recorded and became a part of the data collected within the design of the project.

High School Records The complete high school records for each subject of the project were part of the data collected. High school records

[11] S. R. Hathaway and J. C. McKinley, *Minnesota Multiphasic Personality Inventory* (revised manual). New York: The Psychological Corporation, 1951.
[12] Walter W. Cook *et al., Manual for the Minnesota Teacher Attitude Inventory.* New York: The Psychological Corporation, 1951.
[13] J. P. Guilford *et al., The D F Opinion Survey.* Beverly Hills, California: Sheridan Supply Company, 1960-61.
[14] *Sequential Tests of Educational Progress: Manual for Interpreting Scores.* Princeton, New Jersey: Educational Testing Service, 1957.

indicated the rank of each subject in his high school graduating class. Grade averages for the various subject areas and number of credits earned while a high school student were part of the data collected.

Description of Subjective Data

Individual Interview The elementary education faculty recognized that in the curricular structure of the elementary education program the student spent the first two years of his academic preparation studying in the areas of general education. The student had little if any contact with the faculty of his major area until he became a junior. Since part of the purpose of the project was to detect whether or not some degree of valid prediction as to teacher competence could be made at some point during the four-year period of preparation, the elementary education faculty elected to carry out a series of individual interviews with the students in the study. Furthermore, some of the most profitable research preceding the study seemed to indicate that the interview was one of the most promising predictive devices.

The individual interview required assessment of certain teaching personality dimensions. It was the intention of the faculty to record a professional judgment as to the observable existence of those teaching personality dimensions identified and organized by the faculty in an interview form. The interviewer was entirely free to use any method he felt appropriate to ascertain the degree to which the interviewee possessed the teaching personality dimensions indicated on the interview form. After the interview was held, the faculty member recorded his professional judgment as to the existence of these dimensions on a scale of 1 to 5. A rating of one represented a lesser degree of the personality dimension present than did a rating of five.

Two questions were also answered by the interviewer: (1) Will this person be the kind of teacher we wish to certify? (2) Will this person survive the elementary education program? The interviewer could mark one of the three, "Yes," "No," or "Provisional."

The second question was included because the attrition rate for all reasons at Ball State is approximately 50 per cent during the first year. The faculty felt that it might be helpful to determine whether or not they could identify those individuals who for some reason probably would not survive the elementary education program. The question of survival was especially pertinent because of the peculiar attitude regarding elementary education. When working with elementary education majors, faculty quickly discover that some are studying elementary education as a path of least resistance, parental suggestion, curricular adviser advice, or any number of reasons other than considered commitment to elementary teaching.

The Interview Form (*see* Appendix) was constructed by the elementary education faculty. The various points on it represent the faculty's conception of those personality dimensions that *should be* possessed in some degree for a person to be a competent teacher. It is essential to recognize as did some

of the faculty that the interview form was a subjective selection made by professional, highly educated persons who were each day giving assistance and instruction in a direction which they felt eventually produced competence in teaching. To assume that the faculty could not or should not indicate those dimensions which they felt contributed to competent teaching would be to negate and invalidate their day-by-day instruction, judgments, and assessments. In other words, a teacher-educator has some idea of the dimensions of competent teaching since his days are spent in developing these competencies and making judgments about them.

Participation Reports During the junior year the elementary education major takes a course known as *Participation.* In this course a student is assigned to a laboratory school teacher and works with the teacher and the boys and girls in the class. The laboratory teacher and the university instructor are free to assign whatever they judge to be most appropriate and profitable for the particular student. Therefore, there is considerable latitude in what each student does in *Participation.* The student also meets once a week with the university instructor who assists in any way he can in the development of the student's teaching competencies.

At the termination of the described course, the laboratory instructor writes an assessment or subjective appraisal of the student's performance and indicates his prediction of each student's probable competence. Again, the teacher-educator is asked to record a subjective professional judgment as to the student's potential and promise.

Student Teacher University Supervisor's Report As a third subjective appraisal the student teacher supervisor submits his professional judgment regarding the work of the student teacher. This account is intended to be separate from the comments submitted on the Placement Bureau Form, which is a part of the credentials used for employment. In a separate report the supervisor is free to state whatever he feels accurate without jeopardizing the student's chances for employment.

Student Teacher Critic Report Similar to the university supervisor's report is the student teacher supervising teacher's report. At the termination of student teaching the supervising teacher prepares an evaluation of the performance of the student. This report is the same report submitted to the Placement Bureau as a part of the credentials used for employment.

Principal's Report When the selected subjects of the Elementary Education Selection Research Project were graduated and assumed teaching positions, administrative personnel of the project's first-year in-service teachers were asked to comment on the subject's professional activities. Three questions were asked of the principals on a form (*see* Appendix) mailed to them. Latitude in answering the questions was permitted since expository responses were requested. The education faculty at Ball State University designed questions to ascertain whether teachers contributed in a professional way to the instructional operation of the school and whether the teachers attempted to cooperate with their colleagues. The principal was also asked

to comment on the performance of the first-year teacher, since by design the Selection Project attempted to determine the degree of competence its subjects possessed.

Teacher's Professional Activites Form Subjects of the Elementary Education Selection Research Project were asked during their first year of in-service teaching to respond to a questionnaire (*see* Appendix) mailed to them. Questions on the form were designed by the elementary education faculty to elicit expository responses concerning the professional behavior of the teacher. It was felt that knowledge of memberships in professional organizations, the professional periodicals and books read, additional courses and workshops completed beyond the bachelor's degree, and plans to work on an advanced degree would be indicative of professional interest in teaching as a career.

Observer Scale The Observer Scale, used to rate first-year beginning teachers (*see* Appendix), was designed by the elementary education faculty. During innumerable conferences and a great deal of subcommittee work the Observer Scale was designed and accepted as representative of the elementary education faculty's conception of some important aspects of good teaching. It was agreed that this scale was the design of the product that the elementary education faculty hoped to produce.

The Observer Scale contained three major sections: Instructional Excellence, Social Sensitivity, and Personality Characteristics and Physical Capability. The evidences of these teacher behavior characteristics were checked by the faculty observing the first-year beginning teacher. In one of the five columns the observer indicated the degree of the behavior observed. The alternatives were *none, very little, adequate, a great deal,* and *not observed.*

The beginning teachers were observed by elementary education faculty members who submitted the marked Observer Scale indicating their judgment as to the degree of behavior characteristics they observed to be present.

On the last page of the Observer Scale was a section entitled "Your General Conclusion—This teacher in *total* consideration is: Ineffective, Mediocre, Very Effective." The above terms were placed upon a continuum line. Any other terminology or words could have been used to represent the competence or incompetence of the observed beginning teacher. The faculty member observing the beginning teacher indicated by a mark on the continuum line his assessment of the total teaching situation.

Because the teaching process is extremely complicated, and perhaps distorted to some extent, when it is fragmented into separate behavior characteristics as listed on the Observer Scale, the faculty wished to indicate a professional assessment of the total teaching act and atmosphere.

It seemed entirely conceivable that the observer may have seen the teacher exhibit the behavior characteristics on the Observer Scale to a great extent and yet have assessed the teaching act and atmosphere less than effective. The reverse condition may also have existed. For example, the first-year teacher may have demonstrated to a very limited degree the

behavior characteristics on the Observer Scale while the observer judging the total teaching performance may have assessed it most effective. The assumption that the very nature of the teaching act is highly integrated with the personality of the teacher undergirded the justification for assessing the total teaching act and atmosphere.

In summary, a battery of seven standardized tests was administered to collect the objective data. The subjective data consisted of seven recorded subjective professional judgments. Such a wide range of exploration offered more promise as directives for the development of criteria for selection of teacher candidates and for curricular revision than previous studies which dealt only with objective data.

Chapter IV

Report of Results

THREE MAJOR STUDIES have been undertaken within the design of the Elementary Education Selection Research Project to identify criteria to be used in a program of selection and retention of elementary education candidates. The results reported in this chapter are a synthesis of the studies completed at this date. The following chapter contains an explanation of the criteria of effectiveness used in the various studies and a report of the results from the three studies.

Criteria of Effectiveness

The faculty that established the curriculum at Ball State University was also the same faculty that implemented the curriculum and subsequently evaluated the results of the curricular experiences provided by observing and evaluating the effects of its design for preparing elementary school teachers. For this reason the results depend on the acceptance of the ability of a faculty to create a design of its own.

A pre-service criterion of competence was employed in two of the studies while an in-service criterion was employed in the third study. The two criteria were similar in that both fit within the definition of effectiveness developed at the onset of the Elementary Education Selection Research Project and both involved collective professional judgment in the evaluation based on direct observation of the product.

Pre-Service Criterion Pre-service success scores were derived by a multicriterion for the subjects of this investigation, and the success values included, in part, the collective judgment of the Division of Education faculty. The multicriterion used to obtain the pre-service success scores included for each subject the weighted values of the observation and participation grade, the student teaching grade, a forced ranking by student teacher supervisors, a forced ranking by observation and participation supervisors, and a three-member jury's forced ranking after examining the information gathered by the Elementary Education Selection Research Project. It was possible to assign each student in the project a success score incorporating the proportionate value and the weighting of his elementary laboratory experiences for the five selected criteria. This value was called the *Composite Pre-Professional Performance Score* (*CPPS*). Hereafter, the criterion of competence is referred to as teaching competence or teacher success value.

In-Service Criterion The criterion of effective in-service teaching performance was provided by the combined scores on an Observer Scale

completed for first-year elementary teachers on the basis of individual observations in the classroom made by two or three members of the elementary education and student teaching faculties of Ball State University.

The 37 statements of the Observer Scale, in which the observer determined the extent to which the behavior or characteristic was evident, constituted the definition of teaching competence as jointly synthesized by the elementary education faculty. Therefore, these statements provided the criterion of effectiveness compatible to the definition of teaching performance employed by the Elementary Education Selection Research Project. Numerical values were assigned to each of the possible choices for each of the 37 items in order that a total quantitative score might be determined for each of the subjects under consideration.

A statistical significant relationship was found to exist between the pre-service and in-service assessments of competence. Such a finding may indicate that first-year teaching success predictions could be made at the pre-service level by professional judgments made of teacher candidates in situations closely simulating actual teaching activities.

Objective Data Results

Academic Grades One of the major sections of the study was a collection and examination of objective data in relation to teacher competence. The objective data consisted of measures of academic success as indicated by college grades, a series of standardized test scores, and high school grades.

The investigations completed to date within the design of the Elementary Education Selection Research Project indicate that total grade point averages and total credit hours earned in freshman and sophomore years were not correlated significantly with assessed pre-service or in-service teaching success scores. However, the mean of the least competent group was slightly higher than the mean of the most competent group. The difference was insignificant, suggesting that probably grades are not the key to pre-service or in-service teaching success.

Grade point averages obtained by the student in nine academic areas were correlated with teaching success values. Three correlations were found to be significant beyond the .05 level of probability. Physical education, industrial arts, and mathematics grade point averages were positively correlated with teaching competence. Further examination of this finding revealed that it was not possible to identify the potentially most or least competent teachers when examining grade point averages in any one academic area.

Standardized Tests of Personality, Vocational Interest, and Attitudes In the studies currently completed the results of four objective tests of personality, vocational interests, and attitudes were studied as potential predictors of teaching performance. The following tests were selected and administered during the freshman year to each of the elementary education teacher candidates: (1) *Strong Vocational Interest Inventory*

(*SVII*), (2) *Dynamic Factor Opinion Survey* (*D F Opinion*), (3) *Minnesota Teacher Attitude Inventory (MTAI)*, and (4) *Minnesota Multiphasic Personality Inventory* (*MMPI*).

After careful analysis the results showed that the *SVII* and the *MTAI* were not reliable measures for differentiating the levels of competency demonstrated by the most competent and least competent student teachers or first-year teachers.

Scores on the *Minnesota Multiphasic Personality Inventory* (*MMPI*) consisting of ten independent personality type variables and one validity scale were correlated with teaching success values. In two separate studies using different populations the Scale O (Introversion-Extroversion) (Si) was significantly related to teaching success as measured in this project. Since the coefficient of correlation between (Si) and teaching success values was significant beyond the .01 level of confidence, it would seem that the two variables were inversely related, i.e., as teaching success values went up, case scores on (Si), of the *MMPI,* tended to go down. Drake and Oetting's *MMPI Codebook* was used as a guide for *MMPI* scale and profile interpretations.[15] The authors have stated that a high female coding of (Si) suggests social shyness, insecurity, shyness in interviews, and a lack of skills necessary for one to relate to the opposite sex. When (Si) is coded low, it appears to indicate good general adjustment, especially social adjustment. It was further pointed out in the codebook that women with low coding on Scale O (Si) were likely to be marriage-oriented and were lacking in academic motivation. The negative correlation would suggest that as students were assessed more successful in teaching, they tended to have lower (Si) scores or were more extroverted than introverted. Another interpretation of the same findings, in terms of students assessed less competent teachers, indicates that as (Si) scores rise, teaching success values drop.

The third study found that Scale 7 (Psychasthenia) was significantly related to teaching competence. In addition, it was noted that scores on Scale 5 (Masculinity-Femininity), although not meeting the .05 level of probability, did correlate with the criterion at a level of significance between the .10 and .05 levels. The *MMPI Codebook* stated that women with high codings on Scales 5 and 7 in combination with lower codings on Scale O (Introversion-Extroversion) tend to be socially extroverted.[16]

The *D F Opinion Survey,* supposedly measuring ten motivational type factors, was correlated with individual teaching success values. Product moment correlations between assessed success values and scores on the *D F Opinion Survey* yielded variant significant correlations within the three studies. A correlation coefficient of .2166, significant between the .02 and .05 probability levels, was obtained between teaching success values and scores on Scale 6 (Cultural Conformity) in one study. The negative but significant correlation suggests that as teaching success values increase, scores on Scale 6 (C C) decreased.

[15] L. E. Drake and E. R. Oetting, *An MMPI Codebook for Counselors.* Minneapolis: University of Minnesota Press, 1959, pp. 16-17.
[16] *Ibid.*, p. 117.

An interpretation of high and low scores of (C C) of the *D F Opinion Survey* is as follows: An individual with a high score tends fully to accept customs and has a highly developed conscience and ethical awareness. A low score suggests an individual who rejects social customs and is little bothered by conscience. Seemingly, the relationship existing between assessed pre-service teaching success values and (C C) scores of the *D F Opinion Survey* suggests that the less competent students tend to conform to cultural demands and ethical standards, while the more successful students conform less to the pressures of the conscience and/or their culture and are probably more independent in decision-making.

Although a significant relationship was established between (C C) scores and assessed success value, it was impossible to prove via "t" test that the two extreme success groups differed significantly on mean scores of Scale 6 (C C) or that a single high or low score would differentiate between the least or most competent teacher.

A second and third study found Scale 9 (Need for Precision) to be significant beyond the .05 level of probability when correlated with teaching success values. From this negative but significant correlation it may be suspected that as scores on the teaching success values increased the scores on Scale 9 (Need for Precision) tend to decrease. Guilford and others[17] provided an interpretation of the person characterized by a low coding of Scale 9 (Need for Precision) of the *D F Opinion Survey* as one who tends to dislike exactness, precision, and detail. It would appear from the findings of the second and third studies that teachers rated high in teaching success tend to dislike exactness and precision.

The findings of the three studies seem to indicate that the *D F Opinion Survey* sections entitled Scale 6 (Cultural Conformity) and Scale 9 (Need for Precision) may be a helpful adjunct to considering possible tools for selecting the competent teacher.

The objective data were further analyzed to determine whether a combination of measures would provide a greater degree of relationship to successful teaching than that attained by a single variable. A multiple correlation was computed between a combination of 39 independent variables and teaching successes. The 39 variables consisted of the individual sections on the objective tests used to gather objective data for this project. Of the 39 variables correlated with teaching success, the following four variables in combination seemed to be the most valid predictors of teaching performance: Scale 7 (Psychasthenia), Scale 5 (Masculinity and Femininity) of the *MMPI*, Scale 9 (Need for Precision) of the *D F Opinion Survey*, and *Composite Pre-Professional Performance Score (CPPS)*. (See page 13 for description of *Composite Pre-Professional Performance Score.*) Knowledge of the scores of these measures reduced the error of prediction 15 per cent more than those predictions made without knowledge supplied by these measures.

[17] J. P. Guilford *et al.*, *The D F Opinion Survey: Manual of Instructions and Interpretation.* Beverly Hills, California: Sheridan Supply Company, 1960-61.

The following objective tests of intelligence and academic achievement were among the selected pre-service measures under investigation as possible predictors of teaching competence of elementary teachers: (1) *Cooperative School and College Ability Test* (*SCAT*), (2) *New Purdue Placement Test in English* (*Purdue*), (3) *Sequential Tests of Educational Programs* (*STEP*).

In all three studies the findings indicated that the scores obtained on the above tests, which were administered at the freshman level and correlated with teaching success, were low and not significant. It should be recognized that by the time students have reached the point of student teaching and certification as elementary teachers, much selection on the basis of these and other variables has taken place. Consequently, with the range of knowledge and intelligence represented by those who have survived the various courses and personal selective processes, the variables do not appear to be of major importance in teaching performance.

Subjective Data Results

Within the design of the Elementary Education Selection Research Project, individual interviews were conducted by Division of Education faculty members with freshman and sophomore elementary education candidates. It was assumed that the characteristics selected to be assessed in the interviews could be evaluated by the professional personnel. Although error can exist in any measure, it is possible in two directions. Therefore, the interpreters of the findings of the various studies assumed that each of the variables was accurately measuring the particular characteristic it was intended to measure.

Individual Freshman Interviews Teaching success values and ten characteristics assessed during an individual interview (*see* Appendix for interview form) conducted by a faculty member in each subject's freshman year of college were correlated. The ten characteristics assessed were the following: voice, physical appearance, grooming, speaking ability, initiative, social intelligence, emotional balance, general maturity, degree of motivation, and insight or perception.

The findings of the interview investigation will be reported on the basis of two studies conducted. The studies used the criterion groups of pre-service teachers who were selected on the basis of the pre-service criteria described earlier in this chapter. Of the ten characteristics assessed by the interview and correlated with pre-service teaching success, two, student motivation toward teaching and emotional balance, were found to be significant between the .02 and .05 probability levels. These data suggest that students who were assessed as being emotionally well-balanced and who also showed a high degree of motivation during freshman interviews were also assessed as the most competent students at the time of their pre-service teaching experiences.

Of interest also is the finding that insight or perception correlated within hundredths of being significant at the .05 level of probability. Speak-

ing ability was significant between the .10 and .05 level of probability. Although these correlation coefficients were unable to satisfy the .05 level, these findings may indicate that there may be a relationship which should be further investigated. Voice, physical appearance, and grooming were not related to pre-service teaching success. These data may indicate that voice, physical appearance, and grooming, as assessed by faculty members, cannot be used to predict which students, of those that survive an elementary education curriculum, will be most or least competent in their pre-service teaching experiences; (emotional balance and degree of motivation can be considered as possible predictors) speaking ability and insight or perception should be given consideration as predictors.

Although the correlation coefficients indicated significance, only one of the two variables identified during freshman interviews differentiated between most and least competent students. The values of "t" between the two success groups on emotional balance were significant between the .02 and .05 level. Degree of motivation, also significantly correlated with pre-service teaching success values, did not significantly differentiate between most and least successful students; however, the mean of the most successful group was higher than the mean of the least successful group.

Insight or perception and speaking ability, although not significantly correlated with teaching success, were suggested as potential correlates. Insight or perception differentiated significantly between most and least successful groups, and the most successful criterion group had the higher mean score.

Speaking ability did not differentiate significantly between the two criterion groups, although the most successful group did have the higher mean score. On the basis of these data, one could conclude that insight or perception and emotional balance did tend to differentiate between the most and least competent group and that the two criterion groups did represent different populations on the two variables.

The second study investigated the relationship of the freshman individual interview to pre-service teachers' success values. Correlations were run between teaching success values and the ten selected variables indicated earlier. Five correlations were significant beyond the .05 level of probability, viz., degree of motivation, emotional balance, social intelligence, initiative, and speaking ability.

The statistically significant correlations between success values and ratings on degree of motivation, emotional balance, and social intelligence suggested that a positive relationship existed while a lesser although positive relationship was found on initiative and speaking ability. When the "t" test was made, differentiation between extreme criterion groups could not be made.

The consistency between the findings of the first study—namely, that there seemed to be a positive relationship between pre-service success values and emotional balance and motivation—and the second study, which showed the same tendency, strengthens the probability that assessment of these two variables may offer some promise for prediction.

Individual Sophomore Interviews As students progressed in their educational preparation for teaching, interviews were held at the sophomore level. Again the first study used criterion groups of pre-service teachers while the second study was made of in-service teachers as criterion groups. Results of the first study showed that of the ten characteristics correlated with pre-service teaching success only social intelligence was significant between the .01 and .02 level of probability. Further examination revealed that the "t" test did not satisfy the .01 and .05 level of probability, indicating that social intelligence, although positively related to pre-service teaching success, did not differentiate between the most successful and least successful groups.

The second study found nine of the ten characteristics correlated positively and significantly with teaching success. The only one not significant was degree of motivation. This is an interesting finding since degree of motivation was positively related at the freshman level. An explanation may be that at the sophomore level the students have learned to be more blasé and less obvious in verbalizing or expressing their intentions. Another possible explanation may be that since the students who have survived and sustained their position as elementary education majors by the sophomore year are motivated and committed definitely to teaching while those who have separated themselves from the elementary curriculum are not.

The "t" test values used for analyses between mean scores to determine if ratings received on the sophomore interview distinguished between extreme groups were not significant at the .05 level of confidence. Thus the interview ratings did not identify the most and least competent pre-service teachers.

It seems important to recognize that as findings were examined the number of variables related to teaching success considered on the interview form increased at the sophomore level. Physical appearance, grooming, initiative, social intelligence, emotional balance, general maturity, and insight or perception were the variables assessed by the elementary faculty interviews which showed correlative relationships at the .01 level of confidence while voice and speaking ability were correlated significantly at the .05 level.

Chapter V

Summary, Conclusions, and Recommendations

Summary and Conclusions

THE PERSISTENT AND CONTINUOUS SEARCH for criteria of identification and selection of students who possess a high potential for teaching competence remains an urgent matter. The massive amount of research in this area presents a mosaic of studies of individual personality, ability, and preparation in the search for a selection procedure.

The Elementary Education Selection Research Project designed and carried out by the elementary education faculty at Ball State University represents a new approach and an intensified effort in this direction. The intent of the faculty was to determine with clarity the characteristics of the product they hoped to produce, namely, a competent teacher. Using the Observer Scale as the criterion for competence, the elementary education faculty attempted to test whether or not they could predict teaching potential, consistent with the design, of pre-service and in-service teachers.

A series of three studies was completed at the time of this writing. The findings of these studies contribute to the initial purpose of the Elementary Education Selection Research Project. Since the project contained two major sections, a summary of the findings will be reported with reference to these sections, namely, the objective data and the subjective data results.

Objective Data Results 1. The objective data collected and studied consisted of certain selected measures of academic success as indicated by college grades, standardized tests, and high school grades. The studies completed indicate that total grade point averages and total hours earned in the freshman and sophomore years were not correlated significantly with assessed pre-service or in-service teaching competence. From these indications, consistent with earlier studies and findings, it seems evident that high grades alone are not the key to teaching competence. However, grades obtained in certain courses—physical education, industrial arts, and mathematics—are positively correlated with teaching success. Although a relationship existed, it is not possible to identify the least or most successful teachers when examining grade point averages in any one academic area.

2. After careful analysis the results indicated that the scores on the *Strong Vocational Interest Inventory (SVII)* and the *Minnesota Teacher Attitude Inventory (MTAI)* were not reliable measures for differentiating the levels of competency demonstrated by the most competent and least competent teachers.

3. From the ten independent personality type variables of the *Minnesota Multiphasic Personality Inventory* (*MMPI*) correlated with teaching

competence, Scale O (Introversion-Extroversion) (Si), Scale 5 (Masculinity-Femininity), and Scale 7 (Psychasthenia) were significantly related. An interpretation of these findings suggests that competent teachers tend to be extroverted, socially well-adjusted, and marriage-oriented, while less competent teachers exhibit introverted and lesser degrees of the characteristics found in competent teachers.

4. The findings of the investigation regarding the *D F Opinion Scale* showed that there was a significant relationship between teaching competence and Scale 6 (Cultural Conformity) and Scale 9 (Need for Precision). The results suggest that the less competent teachers tended to conform to cultural demands and ethical standards, while more competent teachers conformed less to pressure of conscience and/or their culture and were probably more independent in decision-making. The competent teacher also did not feel or possess the drive for precision and exactness that existed in the less competent teacher.

5. The scores obtained on the *Cooperative School and College Ability Test (SCAT)*, the *New Purdue Placement Test in English (Purdue)*, and the *Sequential Tests of Educational Programs* (*STEP*) when studied in relation to teaching competence revealed the following: The subject matter, knowledge, and intelligence test scores have a low and insignificant relationship to teaching performance. However, this conclusion must be tempered by the realization that by the time students have reached the point of participation in student teaching activities and certification, much selection on the basis of these and other variables has taken place. Knowledge, subject matter, and intelligence test scores are generally reflected in grades. Although the high relationship between grades and intelligence test scores has been repeatedly demonstrated, the lack of relationship between these scores and teaching competence suggests that grades and scores on achievement and intelligence tests are not reliable indices of teaching competence.

Subjective Data Results Within the design of the Elementary Education Selection Research Project individual interviews with the freshmen and sophomores were conducted by the elementary education faculty members. The freshmen and sophomore interviews, when studied in relationship to pre-service competence, revealed the following information.

1. In the first study, two characteristics of the ten assessed on the interview form were found to be correlated with teaching competence. They were emotional balance and motivation toward teaching. The faculty interviewer assumed that he knew what emotional balance was and that he could recognize it. The same assumption was made regarding motivation and commitment to teaching, because educators do exercise this kind of professional judgment every day in their work in many ways. Furthermore, some interviewers may be more perceptive in their assessments than other interviewers. The degree to which one interviewer is more accurate in his predictions or perceptive in his assessment has not been determined but should be carefully studied.

2. In the second study, the freshman interviews, when correlated with teacher competence, showed significant correlations on five of the ten char-

acteristics investigated. Degree of motivation, emotional balance, social intelligence, initiative, and speaking ability were found to be related to first-year teaching competence. The consistency of the relationship of emotional balance and motivation to teaching competence strengthens the probability that assessment of these two characteristics at the freshman level may offer some promise for prediction.

3. Speaking ability and insight or perception were correlated at the .10 and .05 level of probability.

4. Voice, physical appearance, and grooming were not related to pre-service teaching competence; therefore, these characteristics are probably not worthy of use as potential predicting elements.

5. When the ten characteristics assessed in the sophomore interviews were correlated with pre-service competence, only social intelligence was related.

6. Contrasted to the findings stated in point 5, nine of the ten characteristics assessed during the sophomore interview were found in the second study to be related to teaching competence.

These findings seem to indicate that the sophomore interviews may be more helpful in selection than the freshman interviews. The fact that degree of motivation was not related at the sophomore level may mean that by the time a student is a sophomore he has decided he will go through with his teacher training and those who are not committed to teaching "select themselves" out of the curriculum. Furthermore, it appeared that an interviewer was better able to assess the potentially successful pre-service teachers on more characteristics as a result of interviews in the sophomore year than in the one conducted during the freshman year. Evidently, the attributes that cause subjects to receive pre-service teaching success ratings were beginning to come forth in interviews held nearer the time for admission to upper division study.

Recommendations

Recommendations for institutional use of the findings of the three studies conducted within the framework of the Elementary Education Selection Research Project are made within the following limitations inherent in the design and in the findings of only three individual studies:

1. The subjects used in these studies were limited to students matriculated at Ball State University.

2. The students studied must be considered competent in their pre-service teaching experiences by virtue of their eventual certification. Levels or degrees of competence or success were assessed and compared. Insofar as the studies were limited to those students who would eventually be certified, the range of levels is less wide than it needs to be to secure an accurate picture. This is an inherent weakness in the study.

3. Pre-service teaching success should not be considered to mean potential in-service teaching success. In two of the studies pre-service teachers were studied while one study investigated in-service teaching success. Thus

a clear distinction is advisable in considering the recommendations of this study.

4. The recommendations suggested must be taken with caution in view of the design or blueprint representing the product Ball State University's elementary education faculty hoped to produce. It is conceivable that another faculty may have a different or variant blueprint for its teacher product and thus would find these recommendations not useful.

Recommended use of objective data includes the following suggestions:

1. If the current concept of competence in respect to elementary education students is maintained, grade point ratio for acceptance to the elementary teacher education curriculum should not be the only criterion for admission or selection. Academically weak students will usually screen themselves out of the teacher education program. It is possible, however, that if grade point ratio is raised, characteristics of the product the university has assessed most competent might be changed.

Course grades in areas that require a student to apply himself more overtly should be considered in screening candidates for elementary education since they were better indicators of potentially successful pre-service teachers than were course grades in lecture courses.

2. Selected scales of the *MMPI* and *D F Opinion* can be considered as screening devices at the pre-service level. Of the variables studied, the three best single measures of first-year teaching performance are two scales of personality inventories (Psychasthenia Scale of the *MMPI* and Need for Precision Scale of the *D F Opinion*) and an aggregate score composed of predictions made by professional educators of students' future performance as elementary teachers.

The recommendation must be tempered by realization that one study found that the *MMPI* and *D F Opinion* scales did not differentiate significantly between the competent and less competent pre-service groups.

3. The *Strong Vocational Interest Inventory (SVII)* and the *Minnesota Teacher Attitude Inventory (MTAI)* seem to be of little value in either pre-service or in-service selection. Of the two tests the *SVII* may have some limited value in identifying the interest of those students likely to survive the elementary education teacher program; therefore, there might be some screening value in the selected scales if surviving students were compared with nonsurvivors of an elementary teacher education curriculum.

4. Tests of intelligence and academic achievement, or more specifically *SCAT, Purdue English,* or *STEP,* should not be used as predictive or selective devices for teaching candidates. Obviously, a certain amount of achievement and intelligence is necessary for competent teacher performance, but since academic requirements for continued studies are established by the institution, much selection on the basis of intelligence and achievement has already taken place, making these variables appear of no major importance in teacher selection.

5. The findings of these studies are unique in that the elementary education faculty realistically and practically determined and recognized their ideas of the kind of person they wished to develop as a teacher. Serious ques-

tions may be raised as to whether the curriculum presently accomplishes the objective; nevertheless, the faculty, through thought and discussion, came to articulation and awareness of the quality of the product they wished to develop as described in the Observer Scale. The design and the use of a multidimensional criterion of competence by a number of professional educators subjectively and objectively evaluating the candidate give added strength to the selection process.

An institution interested in establishing a new screening program or improving an existing program may find it valuable to begin a study of its own in the following way:

a. Develop a description of the teachers it wishes to produce.

b. Administer the *D F Opinion Scale* and the *MMPI* to the entire group of matriculating elementary education teacher candidates or a sample of candidates.

c. Develop and use a composite preprofessional performance score. A study of the nature of the *CPPS* in this study may suggest guidelines (*see* page 13). Of course, the *CPPS,* as designed in these studies, should not be available until students have nearly completed the preparation program; therefore, it may be important to design some kind of experience for the prospective teacher early in his preparation so that an assessment of his potential may be made. It may also be important for the student himself to learn whether or not he finds himself compatible with this kind of endeavor.

d. Hold interviews by the elementary education faculty once during the freshman year and once during the sophomore year. The interviews should attempt to assess those characteristics found to be related, if only slightly, to teaching competence.

e. Consider course grades in areas that require a student to apply himself overtly as a part of the study carried on to develop a screening program.

f. In summary, consider the above recommendations only as suggestions to an institution embarking upon a study of its own, unique for its faculty and for its college of education, to assist in devising a new selection program or altering or rejecting its present selection process.

The importance and need for selection of teachers have been recognized for at least a century. It could even be said that since man began to entrust his most valued possession, his children, to teachers, he has been sensitive to their quality. Ben Blewett,[18] in addressing the 1913 convention of the National Education Association, saw the need but also thought the process simple, for he said that "the qualities which distinguish successful teachers from tyros or misfits stand out in bold relief and cannot be overlooked or mistaken by one who is an experienced educator." Most educators would agree that Mr. Blewett may be right; on the other hand, the complexity of the teaching act and the multidimensional performance of the teacher complicate considerably valid and accurate selection.

New Horizons for the Teaching Profession[19] contains the statement that "the number of programs which have a substantial history and consistent

[18] National Education Association, *Addresses and Proceedings.* Washington, D.C.: National Education Association, 1913, p. 291.
[19] *Op. cit.*

pattern in selection are conspicuous because of their scarcity, but they are also conspicuous because of their evident effectiveness." There are some faculties and institutions willing to study the problem and then devise a selection program best suited to the prevailing conditions and situations. Any program of selection is fraught with human fallibility and the exercise of any subjective judgment may result in error or the exclusion of some persons who would make good teachers, but to avoid any selection process is to abdicate the responsibilities of being an educator. The willingness to use to devise a selection program carries with it the willingness to take the risk incurred.

Appendix

Interview Form

Name of Student _____ Date _____

Place of Interview _____ Time _____

Rate the student on the following points using a rank of five to mean that you consider the student to be an excellent potential certifiable teacher. Use ranks two, three, and four as various degrees of prediction. Circle the appropriate number.

Voice (understandable, lack of defects, etc.)	1	2	3	4	5
Physical appearance (attractive, pleasing)	1	2	3	4	5
Grooming (neat, clean, use of cosmetics, hair)	1	2	3	4	5
Speaking ability (force, organization, use of English)	1	2	3	4	5
Initiative (drive, desirable aggressiveness, etc.)	1	2	3	4	5
Social intelligence (fits into a group, poise, manners)	1	2	3	4	5
Emotional balance (nervous, fearful, giggling, etc.)	1	2	3	4	5
General maturity (responsibility)	1	2	3	4	5
Degree of motivation for teaching (depth of commitment)	1	2	3	4	5
Insight or perception (kind of thinking, sees relationship)	1	2	3	4	5

Specific recommendations:

Comments:

Do you believe that this student will survive the elementary education program

Yes *No* *Provisional*

Do you believe that this student will develop into the type of teacher we will be able to recommend?

Yes *No* *Provisional*

This was a: Group interview Individual interview

_____

Staff Member

Evaluation Report Form

Elementary Education Selection Study Program

I. Children's general response to teacher

II. Teacher's response to children

III. Versatility in willingness to try materials and methods in all areas

IV. Reaction to suggestions from supervising teacher

V. Extent to which the self-concept is sufficiently developed in order to allow confidence

Self-centeredness versus situation-centeredness

VI. Mechanical skills
- Command of language
  - Usage
  - Expression
  - Quality of voice
  - Writing

VII. Knowledge of materials and methods
- Understanding in using materials
- Application of learning theory
- Understanding of method

VIII. Physical appearance
- Health and vitality
- Grooming

IX. Extent to which teacher is desirably aggressive
- Initiative
- Leadership
- Acceptance of responsibility
- Free from the need to dominate

X. Emotional balance
- Mannerisms
- Nervousness
- Fearful
- Giggling
- Withdrawing

XI. Social intelligence
- Poise
- Control of self in situation
- Maturity

XII. Application of theory regarding human growth and development

Principal's Comments on Teacher's Professional Activities

Name of first-year teacher _____

Name of principal _____

Date _____

1. Does _____ contribute in a professional way to the instructional operation of the school?
   If so, how?

2. Does _____ foster a feeling of cooperation with colleagues?
   If so, how?

3. Are you satisfied with the performance of this first-year teacher?
   Comments:

Teacher's Professional Activities Form

1. Name of professional organizations of which you are a member.

2. List the professional organization meetings you have attended during the past year.

3. List the professional publications to which you or the school subscribes.

4. List the professional books which have had meaning for you as a teacher.

5. Indicate courses or workshops beyond the bachelor's degree in which you have participated.

6. When do you plan to work on the master's degree?

Observer Scale

I. Instructional Excellence	None	Very little	Adequate	Great deal	Not observed	Illustrative Examples
A. The teacher						
1. proceeds from the known to the unknown in her instruction.						
2. utilizes children's interest in presenting and developing new ideas of concepts to the student.						
3. uses concrete materials to further the learning and understanding of the concept or idea rather than relying principally on verbal means.						
4. attempts to involve all the students personally in the learning situations.						
5. attempts to teach those concepts which are appropriate for the maturity level of the student.						
6. shows classroom control through her or his personality and actions.						
7. uses evaluation as a learning implement.						
8. uses evaluation as a guide for further instruction.						
9. summarizes the material covered, points stressed, and the general process with the student.						
10. has planning and continuity in her instruction.						
11. shows flexibility when incidental learning situations arise.						
12. uses vocabulary appropriate to maturity and background of students.						
13. uses correct grammar.						
14. has speech which is free from defect and voice quality which is pleasant.						
15. shows depth in intellectual background when incidental learning situations arise.						
16. shows sensitivity to the timing and pacing of the learning activities.						
B. The pupils						
1. contribute to planning, help determine objectives, and assist in evaluating their own activities.						
2. show some successful group activity.						
3. show evidence of initiative and self-control.						
C. The classroom						
1. evidences concrete learning, materials on bulletin boards, center of interest, and elsewhere.						
2. shows evidence of a variety of children's efforts.						
3. is physically comfortable.						

	None	Very little	Adequate	Great deal	Not observed	Illustrative Examples
II. Social Sensitivity						
A. The teacher						
1. exhibits a humble attitude, that is, one of learning as well as teaching.						
2. demonstrates understanding of and empathy with the learners.						
3. practices good manners with the children.						
4. encourages all lines of communication, not only between teacher and students but also between student and student.						
5. appears to be accepting all the boys and girls regardless of socio-economic or cultural levels.						
B. The Pupils						
1. respond positively to the personality of the teacher.						
III: Personality Characteristics and Physical Capability						
A. The teacher						
1. is clean and well-groomed.						
2. has physical characteristics which allow adequate agility, body control, and sense perception.						
3. has energy level which appears to be adequate for good management of classroom.						
4. is appropriately and attractively attired.						
5. has adequate speech patterns appropriate for children.						
6. indicates freedom from feelings of hostility or persecution in the treatment of children.						
7. shows warmth, acceptance, and friendliness in her attitudes toward children.						
8. demonstrates self-confidence and personal security, thus encouraging children to feel confident of themselves and of her.						
9. shows enthusiasm and vitality, thus stimulating children's active interest.						

Your General Conclusion

This teacher in total consideration is:

INEFFECTIVE MEDIOCRE VERY EFFECTIVE

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